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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
BLOUNT, STEVEN	
ART UNIT	**PAPER NUMBER**
2661	7

DATE MAILED: 01/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/699,648	FURUKAWA ET AL.	
	Examiner	Art Unit	
	Steven Blount	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5,6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: applicant is requested to rewrite page 4, lines 2 – 15 of the specification, as the language is confusing.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first and second paragraphs of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
>
> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 23 is rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The phrase "being connected" and "not being connected" in the third to last and second to last lines is not defined in the specification (including the drawings) in a way so as to make these terms meaningful (see page 28, lines 15+), and it is impossible to determine what this means.

4. Claim 1 – 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

This application is apparently a translation of a Japanese document, and there are many places in the claims where the language is indefinite. Applicant is requested

to review the claims and make the appropriate corrections. A few examples of these problems are mentioned below:

In claim 1, lines 7+, "said second code" lacks antecedent basis.

In claim 1, line 10, "said combined code" lacks antecedent basis.

In claim 1 lines 15+, "diffusing said transmission signal by the allocated combined code to transmit said transmission signal diffused to said mobile station" is indefinite, and the examiner believes that the use of the term "diffusing" is objectionable here.

In claim 4 line 13, "providing an axis" is indefinite, as this term is also in many other places in the claims.

In claim 8, lines 4+, "grasping" in an indefinite term.

In claim 15, line 6, "uses" is indefinitely used.

In claim 16, line 13, "higher that includes" is indefinite.

In claim 23, "being connected" and "not being connected" is indefinite.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1 – 13 and 15 - 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants Admitted Prior Art (hereinafter referred to as AAPA) in view of U.S. patent 6,421,335 to Kilkki et al.

With regard to claim 1, AAPA teaches the problem associated with a CDMA cellular system wherein a first code set (orthogonal code, see page 25, line 21 of the written portion of the specification) is "allocated" with a second, gold code (line 22+, describing gold and scramble codes, see also figure 1, cs1, cs2, etc.) wherein the first and second codes are multiplied together. AAPA also teaches that when using this method, a problem presents itself that when a plurality of scramble codes are used at the same time,

"when transmission signals having different required qualities such as a transmission rate and a required bit error rate and transmission signals having different reception qualities dependent on a position of a mobile station within a cell, the amount of interference, etc. are handled at one base station, *the degree of interference that each transmission signal received from other transmission signals in the same cell varies due to a difference in a scramble code allocated to cause inequality in communication quality and cause deterioration by interference*" (page 4, lines 2 – 15).

AAPA does not, however, teach the solution to this problem to involve assigning priority to the "combined code" and "allocating said combined code to said transmission signal based on said priority".

Kilkki et al teaches the solution of "guarantee(ing) an adequate signal-to-noise ratio (SNR) for existing connections" (col 2, lines 43+) by calculating priority values based on, among other things, "a signal-to-noise ratio of the CDMA interface" (col 3, lines 51+). See also column 4, lines 10+ and column 7 lines 9+.

It would have been obvious, to one of ordinary skill in the art at the time of the invention, to have reduced overall interference in AAPA through the use of priority values assigned AAPA's combined (orthogonal plus gold) code, in light of the teachings of Kilkkie et al, in order to provide for better communication quality for the transmissions by lessening interference through proper assignment of the said combined codes to the different environmental channels.

With regard to the following claims (hereinafter referred to as "Cl", note the following:

Cl 2: channel quality feedback: see col 4, lines 15+ where it is stated that the trunk (tower sender) performs priority calculations, and also col 4 lines 65+ where it is stated that the calculation unit receives the bit rate indicator. See also the signal/noise ratio discussed above.

Cl 3: setting priority of second code: see discussion of priority above, and note that separate priority values are assigned to the scrambling codes as shown in figure 1.

Cl 4: threshold values for number of users is discussed in col 17 lines 25+.

Cl 5: it is obvious to have the combined code have a higher priority as the first code goes higher, since the first and second codes are multiplied together.

Cl 6: see the combination of the rejections of claims 4 and 5 above in order to meet these claim limitations.

Cl 7: s/n ratio is a transmission quality, as is bit rate.

Cl 8 - 11: note the above, including the discussion in the rejection of claim 1 relating to s/n and calculation of the priority value; further note the discussion of the number of users in claim 4.

Cl 12 - 13: see above, as well as the mention of the calculation of bit rate by the mobile unit in col 4 lines 41+.

Cl 15: see discussion of the number of users above (col 3 lines 65+).

Cl 16: see discussion of number of users, the discussion of multiple levels of scrambling code above, and setting priority levels.

Cl 17: see discussion of number of users, and discussion of priority above.

Cl 18 - 19: signaling channel is mentioned in col 4 lines 48+.

Cl 20 and 22: see discussion of s/n ratio above.

Cl 21: s/n ratio is a measure of signal power to noise power, and this is an obvious variant of simply "reception power" of the common control signal.

Cl 23: see discussion of s/n ratio above, and further note that using different base station values to send different power level signals for determining priority, including those connected to the mobile stations.

Cl 24: note that orthogonal code is mentioned in AAPA and Kilkki et al.

Cl 25: gold codes are mentioned in AAPA.

Cl 26: the means for allocating the second code, assigning priority, allocating the combined code, and sending the transmission signal are all discussed above.

Cl 27 - 36: mobile measuring quality and transmitting this data to the base station, setting priority of the first and second codes, and determining threshold values to set the channel quality values within is discussed above.

Cl 37 - 39: determining priority number of combined codes based on the number of users and the channel quality is discussed above, as is a discussion of using threshold values.

7. Claim 14 is rejected under under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of U.S. patent 6,421,335 to Kilkki et al as applied above, and further in view of U.S. patent 6,035,210 to Endo et al.

AAPA/Kilkki et al teach the invention as described above, but do not teach determining the "transmission quality required amount" based on transmission error rate. This is taught in Endo et al. See col 10 lines 43+.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have determined the "transmission quality required amount" of AAPA/Kilkki et al based on, among other things, the error transmission rate, in light of the teachings of Endo et al, in order to provide a more accurate means for setting the proper priority channel in a CDMA system which is susceptible to interference.

8. Claims 1 and 26 are rejected under 35 U.S.C. 103(a) as being obvious over Applicants Admitted Prior Art in view of U.S. patent 5,530,917 to Andersson et al.

AAPA generally teaches the invention and an associated problem in the art as described above (see paragraph 5 above for a discussion of the claim limitations and also their corresponding means, with respect to claim 26), but does not, as is also

described above, teach assigning priority to the "combined code" and "allocating said combined code to said transmission signal based on said priority" as the solution to the said "associated problem in the art".

Andersson et al teaches this for a CDMA system by assigning priority. See the summary of the invention, and col 9 lines 8+, and figure 5b.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have solved the problem of "variance in interference values" mentioned in AAPA by assigning different priorities to the transmissions, in light of the teachings of Andersson et al in, order to provide a more interference free communication environment.

9. Examiner Steven Blount may be reached at 703-305-0319 between the hours of 9:00 and 5:30 Monday through Friday.

Ajit Patel
Primary Examiner

SB
1/8/03